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| Department of Biotechnology                              |  | LP: BT18412      |
| B.E/B.Tech/M.E/M.Tech : Biotechnology Regulation: 2018A  |  | Rev. No: 01      |
| PG Specialisation : -NA-                                 |  | Date: 07/02/2023 |
| Sub. Code / Sub. Name : BT 18412/Cell Biology Laboratory |  |                  |

| Session No*   | List of Experiments  |
|---|--|
| <b>CYCLE-I</b>  |  |
| 1   | Introduction to principles of sterile techniques and cell propagation                        |
| 2   | Principles of microscopy, phase contrast and fluorescent microscopy                          |
| 3   | Identification of given plant, animal and bacterial cells and their components by microscopy |
| 4   | Gram's Staining – To differentiate gram positive and gram negative bacteria.                 |
| 5   | Leishman Staining – To differentiate nucleated and non-nucleated blood cells.                |
| 6   | Giemsa Staining – To stain blood parasites.  |
| <b>CYCLE-II</b>   |  |
| 7   | Thin Layer Chromatography – Isolation of chlorophyll pigments.                               |
| 8   | Separation of Peripheral Blood Mononuclear Cells from blood                                  |
| 9   | Osmosis and Tonicity   |
| 10  | Trypan Blue Assay – To differentiate live and dead cells.                                    |
| 11  | Staining for different stages of mitosis in <i>Allium Cepa</i> (Onion)                       |
| Content beyond syllabus (if any):<br>The structural difference between various micro organisms will be learnt through simple staining along with the identification of motile nature of microorganisms. |  |

\* Session Duration: 200 minutes

**REFERENCE BOOKS:**

1. Rickwood, D. & Harris, J.R., "Cell Biology: Essential Techniques", John Wiley Publishers, 1996.
2. Davis, J.M. "Basic Cell Culture: A Practical Approach", IRL, 1994.
3. Roitt I., Brostoff J. and Male D. "Immunology", 6th edition, Mosby, 2001.

|  | Prepared by         | Approved by        |
|--|---------------------|--------------------|
| Signature  |                     |                    |
| Name   | Mr. S. Naga Vignesh | Prof. E. Nakkeeran |
| Designation  | Assistant Professor | Professor & HOD    |
| Date   | 07/02/2023          | 07/02/2023         |
| Remarks* : This lesson plan will be followed in the subsequent years |                     |                    |

\* If the same lab plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD